

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	
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Keijo LAIHO et al.)	Group Art Unit: Unassigned
)	
Application No.: Unassigned)	Examiner: Unassigned
)	
Filed: January 10, 2002)	
)	
For: Paging in a Mobile)	
Telecommunication Network)	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Before examination, please amend this application as follows:

IN THE SPECIFICATION

Page 1, line 3, please **REPLACE** the section heading with
--BACKGROUND--; and

line 11, please **DELETE** the section heading entirely.

Page 2, line 9, please **DELETE** the section heading entirely.

Page 4, line 13, please **ADD** a section heading --SUMMARY--.

Page 8, line 12, please **REPLACE** the section heading with --DETAILED
DESCRIPTION--.

Page 13, line 1, please **REPLACE** the section heading with --WHAT IS
CLAIMED IS:--.

Please replace the **ABSTRACT** with the following:

--A method of initiating a call to a multi-mode mobile telecommunication device served by two or more access networks includes sending a paging signal that specifies a preferred access network to the mobile telecommunication device. This ensures that the call will not be rejected as a consequence of being set up over an access network that cannot support the call. A method of completing a call to a mobile telecommunication device in which a paging response is returned via a first access network is also provided. It is then determined whether the first access network can support the call. If the first access network cannot support the call, rather than rejecting the call, according to the invention a communication channel is set up to the mobile telecommunication device over another access network that can support the call.--

IN THE CLAIMS

Please **CANCEL** claims 1-24 without prejudice or disclaimer.

Please **ADD** new claims 25-48 as follows:

--25. (New) A method of initiating a connection to a multi-mode mobile telecommunication device, comprising the step of sending a paging message to the mobile telecommunication device from a core network, the paging message specifying a preferred mobile telecommunication access network for the connection.

26. (New) The method of claim 25, additionally comprising the step of returning a paging response signal from the mobile telecommunication device to the core network over the preferred mobile access network, and subsequently setting up the connection over the preferred mobile telecommunication access network.

27. (New) The method of claim 25, additionally comprising the step of returning a paging response signal from the mobile telecommunication device to the

core network over a mobile access network to which the device is currently monitoring, and subsequently setting up the connection over the preferred mobile telecommunication access network.

28. (New) The method of claim 25, wherein the step of sending a paging signal to the mobile telecommunication device comprises the step of transmitting a paging signal specifying the preferred mobile telecommunication access network for the connection over each of a plurality of networks to which the device may monitor

29. (New) The method of claim 25, wherein the connection is one of a facsimile connection, data connection, or multi-media connection.

30. (New) The method of claim 25, wherein the preferred mobile telecommunication access network for the connection is one of a GSM access network and a UMTS access network.

31. (New) A paging control system for a multi-mode mobile telecommunication device, the system comprising:

input means for receiving a connection setup message corresponding to a new connection for the multi-mode mobile telecommunication device; and

means for determining from the connection setup message whether there is a preferred mobile telecommunication access network for the connection.

32. (New) The paging control system of claim 31, additionally comprising transmission means for causing the transmission of a paging message corresponding to the connection setup message over respective paging channels of two or more mobile telecommunication access networks serving the multi-mode mobile telecommunication device, the paging message containing an indication of a preferred mobile telecommunication access network for the connection.

33. (New) The paging control system of claim 31, wherein the system is located in a Mobile Switching Center of a core network serving a plurality of access networks.

34. (New) A Mobile Switching Center (MSC) comprising a paging control system for a multi-mode mobile telecommunication device, the system comprising:
input means for receiving a connection setup message corresponding to a new connection for the multi-mode mobile telecommunication device; and
means for determining from the connection setup message whether there is a preferred mobile telecommunication access network for the connection.

35. (New) The MSC of claim 34, the MSC forming part of a core network serving a plurality of access networks, wherein the MSC is arranged to initiate a handover to the preferred network when a paging response is received from a mobile telecommunication device on a non-preferred network, and the preferred network is available.

36. (New) A Serving GPRS Support Node (SGSN) comprising a paging control system for a multi-mode mobile telecommunication device, the system comprising:
input means for receiving a connection setup message corresponding to a new connection for the multi-mode mobile telecommunication device; and
means for determining from the connection setup message whether there is a preferred mobile telecommunication access network for the connection.

37. (New) The SGSN of claim 36, the SGSN forming part of a core network serving a plurality of access networks, wherein the SGSN is arranged to initiate a handover to the preferred network when a paging response is received

from a mobile telecommunication device on a non-preferred network, and the preferred network is available.

38. (New) A multi-mode mobile telecommunication device comprising:
means for receiving a paging message initiating a connection, the paging message containing an indication of a preferred mobile telecommunication access network for the connection;

means for determining the preferred mobile telecommunication access network from the paging message; and

means for transmitting a paging response signal over the preferred mobile telecommunication access network.

39. (New) A method of setting up a connection to a multi-mode mobile telecommunication device, the method comprising the steps of sending a paging request from a core network to the device via at least one access network;

receiving at the core network a paging response from the device via an access network to whose paging channel(s) the device is currently monitoring;

determining whether that access network can support the connection; and

if it is determined that the access network to which the device is monitoring cannot support the connection, establishing a communication channel to the mobile telecommunication device over a second mobile access network that can support the connection.

40. (New) A method of completing an incoming or outgoing call to a multi-mode mobile telecommunication device when a pre-existing call is connected to the mobile telecommunication device, the method comprising the step of determining whether the mobile telecommunication access network over which the pre-existing call is established can support the new call.

41. (New) The method of claim 40, additionally comprising the step of if it is determined that the mobile telecommunication access network over which the pre-existing connection is established cannot support the new connection, transferring the pre-existing connection to a second mobile telecommunication access network that can support the new connection, and establishing the new connection over the second network.

42. (New) A method of handling a connection to a multi-mode mobile telecommunication device, the method comprising the steps of setting up the connection over a first mobile telecommunication access network that can support the connection; determining whether a second mobile telecommunication access network can support the connection; and if it is determined that the second mobile telecommunication access network cannot support the connection, inhibiting handover of the connection to the second mobile telecommunication access network.

43. (New) The method of claim 42, wherein said step of inhibiting a potential handover of the connection to the second mobile telecommunication access network is initiated by a MSC/SGSN, which sends a blocking signal to the RNC/BSC of the current access network

44. (New) A MSC for use in a mobile telecommunication network, the MSC comprising:

means for receiving a connection setup message corresponding to an new connection for a mobile wireless device;

means for determining whether a pre-existing connection is connected to the mobile device; and

means for determining, if a pre-existing connection is connected to the mobile telecommunication device, whether the mobile telecommunication access network

over which the pre-existing connection is established can support the new connection.

45. (New) The MSC of claim 44, additionally comprising means for transferring the preexisting connection to another mobile telecommunication access network that can support the new connection if it is determined that the mobile telecommunication access network over which the pre-existing connection is established cannot support the new connection.

46. (New) A MSC for use in a mobile telecommunication network, the MSC comprising:

means for setting up an new connection to a mobile telecommunication device over a first mobile telecommunication access network that can support the connection;

means for determining whether a second mobile telecommunication access network can support the connection; and

means for inhibiting hand-over of the connection to the second mobile telecommunication access network if it is determined that the second mobile telecommunication access network cannot support the connection.

47. (New) A method of initiating a connection from a telecommunication system to one of a set of two or more communication devices, the method comprising the step of sending a paging message to at least one of the set of devices from a core network of the system, the paging message specifying a preferred mobile telecommunication access network for the connection.


48. (New) A method of establishing a connection to a device via a specific one of a plurality of domains defined in a mobile telecommunication system, comprising the step of sending paging messages via one or both of the other domains, the paging messages identifying the preferred domain.--

REMARKS

The specification has been amended and the claims and Abstract have been replaced to place the application in better form for examination. Favorable consideration is respectfully solicited.

Respectfully submitted,

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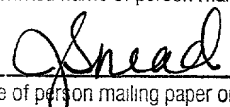
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Attachment to Preliminary Amendment dated January 10, 2002

**Marked Up Copy of Amendments
to the Specification Section Headings**

Page 1, the section heading at line 3
[Field of the Invention] Background

Page 11, the section heading at line 11
[Background of the Invention]

Page 2, the section heading at line 9
[Summary of the Invention]

Page 4, the section heading at line 13
--Summary--

Page 8, the section heading at line 12
[Detailed description of preferred embodiments] Detailed Description

Page 13, the section heading at line 1
[Claims] WHAT IS CLAIMED IS:

Attachment to Preliminary Amendment dated January 10, 2002

**Marked Up Copy of Amendments
to the Abstract**

A method of initiating a call to a multi-mode mobile telecommunication device [(2)] served by two or more access networks [(6,7) comprises] includes sending a paging signal that specifies a preferred access network to the mobile telecommunication device. This ensures that the call will not be rejected as a consequence of being set up over an access network that cannot support the call. [The invention also provides a] A method of completing a call to a mobile telecommunication device in which a paging response is returned via a first access network [(6)] is also provided. It is then determined whether the first access network can support the call. If the first access network cannot support the call, rather than rejecting the call, according to the invention a communication channel is set up to the mobile telecommunication device over another access network [(7)] that can support the call.

[[Figure 2]]